

ABSTRACT

A printed-circuit board (PCB) module has co-planar solder pads on a bottom surface. The solder pads can be surface-mounted to pads on a main board, allowing the PCB module to be surface mounted without wire leads extending from the PCB module substrate. A cavity is formed between the solder pads on the bottom surface. The cavity is formed by milling away some of the thickness of a sacrificial insulator layer, which is the insulator layer under the solder-pad metal layer. The sacrificial insulator layer can be made thicker to allow for milling the cavity without milling into inner metal layers on the PCB module. After milling away much of the sacrificial insulator layer, stand-offs remain under the solder pads, providing a stand-off gap between the top of the cavity and the solder pads when soldered to the main board. The stand-off gap allows for cleaning under the PCB module.

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